# (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 23 December 2004 (23.12.2004)

**PCT** 

## (10) International Publication Number WO 2004/110496 A1

(51) International Patent Classification<sup>7</sup>: A61K 47/48, A61P 37/02

(21) International Application Number:

PCT/IL2004/000534

(22) International Filing Date: 17 June 2004 (17.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

 60/479,185
 18 June 2003 (18.06.2003)
 US

 60/505,638
 25 September 2003 (25.09.2003)
 US

 60/537,553
 21 January 2004 (21.01.2004)
 US

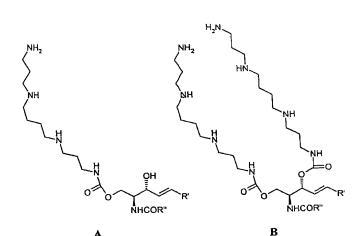
 60/545,505
 19 February 2004 (19.02.2004)
 US

(71) Applicants (for all designated States except US): YIS-SUM RESEARCH DEVELOPMENT COMPANY OF THE HEBREW UNIVERSITY OF JERUSALEM [IL/IL]; Hi Tech Park, Edmond Safra Campus, Givat Ram, 91390 Jerusalem (IL). **BIOLAB LTD.** [IL/IL]; P.O.Box 34038, 91340 Jerusalem (IL).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BARENHOLZ, Yechezkel [IL/IL]; 18 Nave Shaanan Street, 93707 Jerusalem (IL). JOSEPH, Aviva [IL/IL]; 26 Yitzhak Tunik Street, Pizgat Zeev, 97795 Jerusalem (IL). KEDAR, Eliezer [IL/IL]; 3 Eli Cohen Street, 92347 Jerusalem (IL).
- (74) Agent: REINHOLD COHN AND PARTNERS; P.O.Box 4060, 61040 Tel Aviv (IL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

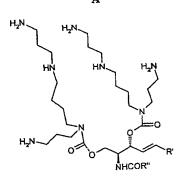
[Continued on next page]

#### (54) Title: SPHINGOID POLYALKYLAMINE CONJUGATES FOR VACCINATION

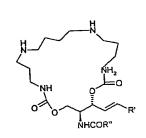


use of a sphingoid-polyalkylamine conjugate as a capturing agent of biologically active molecules, such as antigens. In a particular embodiment, the spinogid-polyalkylamines are used for the preparation of pharmaceutical composition for modulating the immune response of a subject. Other aspects of the invention concern methods for modulating the immune response of a subject by the use of the conjugate, complexes comprising, the sphingoid-polyalkylamine conjugate in combination with a biologically active molecule capable of modulating an immune response of a subject, compositions comprising the conjugate as well as kits making use of said conjugate. A preferred conjugate according to the invention is N palmitoyl D-erythro sphingosyl 1 carbamoyl spermine.

(57) Abstract: The present invention concerns the



C



### WO 2004/110496 A1

MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.